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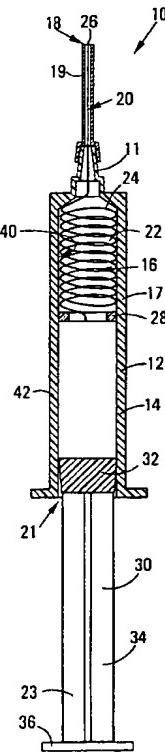
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(54) Title: A METHOD OF FEEDING A SUTURE ELEMENT

(57) Abstract: This invention relates to a method of feeding a suture element (24), which method includes using fluid pressure to displace the suture element (24). The invention extends to a suture element feeding device (10) which includes a body (12) defining a fluid flow path (20) and a fluid inlet (502) whereby a fluid under pressure can be fed into the fluid flow path (20). The body (12) further defines a suture element inlet whereby a suture element (24) can be fed into the fluid flow path (20) for displacement along the fluid flow path (20) together with the fluid, and an outlet (18) whereby the fluid and suture element (24) can be fed from the device (10), the fluid flow path (20) connecting the fluid inlet (502), the suture element inlet and the outlet (18) in flow communication. The invention relates also to a medical implement.



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AMENDED CLAIMS

[received by the International Bureau on 02 July 2004 (02.07.2004);
original claims 1-22 replaced by new claims 1-17 (4 pages)]

1. A method of feeding a suture element which method includes

disposing the suture element in a fluid flow path by feeding the suture element through a suture element feed path, which intersects the fluid flow path at a position intermediate an inlet end and an outlet end thereof; and

causing fluid to flow under pressure along the flow path thereby to displace the suture element along the flow path in the direction of fluid flow.

2. A method as claimed in Claim 1, which includes inhibiting flow of fluid through the suture element feed path in a direction opposite to the direction in which the suture element is to be fed.

3. A method as claimed in Claim 1 or Claim 2, which includes forming at least one eye in the suture element along its length, the eye being configured to receive another suture element therethrough.

4. A method as claimed in any one of Claims 1 to 3, inclusive, which includes selectively releasing and securing the suture element in the suture element feed path thereby to control the amount of suture element fed into the fluid flow path.

5. A medical implement which includes a body defining tissue penetration means for penetrating a tissue to be sutured; a fluid flow path; a fluid inlet whereby a fluid under pressure can be fed into the fluid flow path;

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an outlet whereby the fluid and suture element can be fed from the body, and

a suture element inlet which opens into the fluid flow path at a position intermediate the fluid inlet and the outlet, and whereby a suture element can be fed into the fluid flow path for displacement along the fluid flow path together with the fluid,

the fluid flow path connecting the fluid inlet, the suture element inlet and the outlet in flow communication, and the outlet opening out of the body at a position proximate the tissue penetration means.

6. An implement as claimed in Claim 5, in which the body defines a reservoir, for holding the fluid to be fed into the fluid flow path, the reservoir being connected or connectable in flow communication with the fluid inlet.

7. An implement as claimed in Claim 5 or Claim 6, in which the body defines a suture element feed path which intersects the fluid flow path at a position intermediate the fluid inlet and the outlet, the suture element feed path opening into the fluid flow path via the suture element inlet.

8. An implement as claimed in Claim 7, in which the implement includes releasable securing means for selectively releasing and securing a suture element received in the suture element feed path, for feed into the fluid flow path, thereby to permit control of the amount of suture element fed into the fluid flow path.

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9. An implement as claimed in any one of Claims 5 to 8, inclusive, which includes tissue drive means for driving the tissue onto the tissue penetrating means.

10. A medical implement which includes a body defining tissue penetration means for penetrating a tissue to be sutured; a fluid flow path; a fluid inlet whereby a fluid under pressure can be fed into the fluid flow path; an outlet whereby the fluid can be fed from the body, the fluid flow path connecting the fluid inlet and the outlet in flow communication, and the outlet opening out of the body at a position proximate the tissue penetration means;

a suture element feed path which opens into the fluid flow path via a suture element inlet, by which a suture element can be fed into the fluid flow path for displacement along the fluid flow path together with the fluid; and

releasable securing means for selectively releasing and securing a suture element received in the suture element feed path, for feed into the fluid flow path, thereby to permit control of the amount of suture element fed into the fluid flow path.

11. An implement as claimed in Claim 10, in which the fluid inlet and the suture element inlet are provided by a single inlet into the fluid flow path.

12. An implement as claimed in Claim 11, in which the body defines a reservoir, for holding the fluid to be fed into the fluid flow path,

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the reservoir being connected or connectable in flow communication with the fluid inlet.

13. An implement as claimed in Claim 10, in which the suture element inlet opens into the fluid flow path at a position intermediate the fluid inlet and the outlet.

14. An implement as claimed in any one of Claims 10 to 13, inclusive, which includes tissue drive means for driving the tissue onto the tissue penetrating means.

15. An implement as claimed in any one of Claims 10 to 14, inclusive, in which the releasable securing means includes a securing rod which is displaceable within a bore, defined in the body at right angles to the suture element feed path and intersecting the suture element feed path, selectively to intercept or be removed from the suture element feed path.

16. An implement as claimed in Claim 15, in which the securing rod is resiliently biased towards a rest position, in which it intercepts the suture element feed path, by resilient bias means.

17. An implement as claimed in Claim 16, in which the resilient bias means is provided by a diaphragm over a bore opening which leads into the bore, the diaphragm being displaceable outwardly under pressure of a fluid thereby to displace the securing rod and withdraw it, at least partly, from the suture element feed path to release the suture element for feed along the suture element feed path.